**Citation:** Wardropper, C.B., K. Genskow, A. Lavoie, D. Franklin, E. Usher, A. Wilke, J. Arbuckle, D. Jackson-Smith, L. Prokopy and A. Rissman. 2023. Policy process and problem framing for state Nutrient Reduction Strategies in the US Upper Mississippi River Basin. Journal of Soil and Water Conservation 78(1):70-81. https://doi.org/10.2489/jswc.2023.00025.

Interview guide for all states except Ohio

1. How were you involved in the development of the NRS in [STATE]?
2. Why was the state nutrient reduction strategy (NRS) developed?  What were the primary motivations for implementing an NRS?
3. In 2011, a formal memo was issued by then Acting Assistant Administrator of USEPA, Nancy Stoner to EPA Regional Administrators. The memo included a recommended framework for states to use in addressing the Gulf of Mexico Hypoxia issue. It strongly encouraged creation of statewide Nutrient Reduction Strategies by states, and eventually numeric standards for nutrients. How, if at all, did the 2011 Stoner memo influence development of the NRS in [STATE]?
   1. If the Stoner memo acted as a catalyst for adopting an NRS, how has it influenced [STATE]’s discussion on its environmental impact in the Gulf of Mexico?
   2. Was the Stoner Memo influential in developing further policies or actions in [STATE], in addition to the NRS?
4. What are the primary changes in farmland management practices required or suggested by the [STATE] NRS?
5. In what ways has the NRS changed the state’s efforts to reduce nutrient runoff, if at all?
6. To what extent does the state’s NRS rely on voluntary versus mandatory approaches?
7. Describe the involvement of the following groups in the state’s NRS:
   1. State agencies (examples: DNR, DEQ, DOA, others?)
      1. Which agency was the lead?
      2. How were other agencies involved?
   2. Agricultural organizations
      1. Which groups took leadership roles?
      2. How were other ag groups involved?
   3. Conservation groups
      1. Which groups took leadership roles?
      2. How were other groups involved?
   4. Universities (researchers & extension)
8. How involved are each of those groups (above) currently? and how has their involvement changed over time?
   1. Do stakeholders communicate about progress or implementation of the NRS?
   2. How much do people agree or disagree about model results or measures of success?
9. How do you think [STATE]’S NRS differs from surrounding states?  Why do you think these differences exist?  How and why did the process of developing NRS differ?
10. When people in [STATE] work on implementing the NRS (and nutrient nonpoint pollution issues in general) to what extent are they focused on Gulf of Mexico Hypoxia issues, and to what extent are local / state water quality issues the driver?
11. To date, what have been the main successes or challenges associated with the state’s NRS?
12. How is the progress of the [state]’s NRS being tracked?
    1. What tools and models are being used to estimate impacts or reductions?
    2. Who is responsible for operating these tools and models?
    3. How do those responsible communicate about progress?
    4. How is progress communicated to the public?
    5. How much do people agree or disagree about model results or measures of success?
13. To what extent did each state’s NRS directly lead to new programs and policies to address nonpoint source pollution in the state?
14. Do you think the NRS has influenced additional financial investment in nutrient loss reduction in your state? If so, how/what?

Interview guide for Ohio

1. BACKGROUND: Can you tell us a little about yourself and how you were involved in the NRS process in Ohio?
2. Why was Ohio’s nutrient reduction strategy (NRS) adopted? What was its main purpose?
3. How involved in the development of Ohio’s NRS were each of the following groups?
   1. State agencies (examples: OEPA, ODOA, DNR, others?)
      1. Which agency was the lead?
   2. Agricultural organizations
      1. *How about agribusiness?*
   3. Conservation groups
   4. Universities (researchers & extension)
4. How does the Ohio NRS fit into other state efforts to address nutrient runoff issues?
5. In what ways did the Ohio NRS effort change the state’s efforts to reduce nutrient runoff?
6. What was the extent of NEW financial commitments made by Ohio to implement the NRS?
7. To what extent was Ohio’s NRS (associated with the Gulf Hypoxia Task Force) adapted or customized to fit the unique situation in the state?
8. What are the primary changes in land management practices required or suggested by the Ohio NRS?
9. To what extent does Ohio’s NRS rely on the following tools?
   1. Voluntary/incentive programs/policies VS. Mandates/regulatory approaches
   2. Use of numeric nutrient standards/criteria (or perhaps narrative approaches)?
10. How is progress being tracked?
    1. What tools and models are being used to estimate impacts or reductions?
    2. Who is responsible?
11. To date, what have been the main successes associated with Ohio’s NRS?
12. To date, what have been the main challenges associated with Ohio’s NRS?
13. How does Ohio’s NRS (and the process used to develop it) differ from those adopted by neighboring states?
14. We are also asking respondents one ‘fixed’ answer question: How would you describe the role played by the NRS (developed in response to the EPA requirement) within the overall efforts in Ohio to address nutrient nonpoint source pollution issues? – Which of the following options do you think best describes how this played out in Ohio?
    1. It was the main effort/prime directive for the state’s nonpoint pollution efforts
    2. It was a new program that works independently of other state programs
    3. It was basically an extension of programs that were already going on in the state, or
    4. It was something new that was integrated with other state programs (but shifted the nature of efforts in Ohio)
15. When people in Ohio work to implement the NRS (and nutrient nonpoint pollution issues in general) to what extent do you think are they focused on Gulf of Mexico Hypoxia issues, and to what extent are local / state water quality issues the main focus?
16. What other people would you suggest we talk to about this topic?